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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,970	08/27/2003	Earl M. Gorton	1879A1	6213

7590 11/29/2005

PPG INDUSTRIES, INC.
Intellectual Property
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Pittsburgh, PA 15272

EXAMINER

SANDERS, KRIELLION ANTIONETTE

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 11/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,970

Applicant(s)

GORTON ET AL.

Examiner

Kriellion A. Sanders

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 38-40 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 16-37 is/are rejected.
- 7) ☒ Claim(s) 13-15 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 16- 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minagawa et al, US Patent No. 4,416,797 in view of Amato et al., US Patent No. 6040488.

Minagawa et al discloses chlorinated organic compounds having their resistance to deterioration enhanced by 1,3-dicarbonyl compounds. Patentee provides background information that indicates that chlorinated hydrocarbons such as *trichloroethylene*, 1,1,1-trichloroethane, and *perchloroethylene* have good solubility for greases, fats and waxes, good flame resistance, and a low boiling point, so that they are widely used as industrial solvents in degreasing, washing, drying, extraction and paint removal. However, these chlorinated organic compounds are unstable and undergo dehydrochlorination when exposed to light, or heat, or are in contact with water and certain metals such as iron and aluminum. The hydrogen chloride or chlorine liberated are corrosive, so that processing machinery have been subjected to corrosion, and treated materials are discolored. Many compounds have been used as stabilizers to deter this deterioration, but none have been fully satisfactory.

Minagawa et al has found that 1,3-dicarbonyl compounds or diketone compounds may be used as stabilizers to prevent the dehydrochlorination of the polychloroethylenes. Patentee

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further states that the effectiveness of the 1,3-diketone compounds can be enhanced by including a known stabilizer for chlorinated organic compounds, such as a piperidine compound. Other suitable stabilizers for the trichloroethylenes and perchloroethylenes include phenols and amines such as diethylamine, triethylamine, hexamethylene tetraamine, cyclohexylamine, dicyclohexylamine, morpholine, aniline and pyridine. See col. 2, line 36 through col. 3, line 22 and col. 6, line 31 through col. 7, line 3.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to utilize a piperidine or pyridine type free radical stabilizer in the trichloroethylene or perchloroethylene compositions of the Minagawa et al invention, in the manner that patentee has described.

Amato et al teaches that free radical stabilizers having piperidinyloxy groups are effective stabilizers for halogenated resins, particularly vinylidene chloride polymers. The stabilizers are suggested to be useful in an amount of 1-200 parts per million. See col. 1, lines 4-66 and claim 21.

Since Amato et al teaches the free radical stabilizers to be effective for halogenated resins, it therefore would have been obvious to select a piperidinyloxy type piperidine of Amato et al as the free radical stabilizer for the halogenated polymers of Minagawa et al. in an amount of 1-200 parts per million.

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Claims 1, 2, 16 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uhrhan et al., US Patent No. 4088629.

Uhrhan et al discloses a reaction that is carried out in a biphasic system consisting of an aqueous phase and an organic phase. The organic phase consists of a *piperidine* derivative used as starting material and optionally an inert water-immiscible organic solvent of, for example, petroleum ether pentane, hexane, cyclohexane, benzene, toluene, xylene, chlorobenzene, o-dichlorobenzene, methylene chloride, chloroform, carbon tetrachloride, diisopropyl ether, 1,2-dichloroethane, 1,2-dichloropropane and *trichloroethylene*, etc. Uhran et al suggestes a system containing both trichloroethylene and piperidine. Piperidine compounds are well recognized in the art as free radical stabilizers. The compositions of applicant's claims 1 and 2, 16 and 27 are obvious.

Allowable Subject Matter

2. Claims 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
3. Claims 38-40 are allowed.
4. Prior art cited on form 1449 must include a month and year of publication to be considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kriellion A. Sanders
Primary Examiner
Art Unit 1714

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